

1 **CLAIMS**

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3 1. A method of generating a filter graph for a user-defined processing  
4 project, the method comprising:

5 analyzing the project for multiple accesses to a single source of media  
6 content;

7 determining that the multiple accesses cannot be combined and/or share a  
8 common processing chain; and

9 coupling a single instance of the media source to the one or more  
10 processing chains through a software object to satisfy the multiple accesses  
11 without invoking a commensurate number of multiple instances of the media  
12 source.

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14 2. A method according to claim 1, further comprising:  
15 receiving a request for content at the software object; and  
16 issuing a seek command from the software object to the media source to  
17 retrieve the media for presentation to a requesting processing chain.

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19 3. A method according to claim 1, wherein the method is implemented  
20 by a render engine, exposed from an operating system to a media processing  
21 system executing on a computing system.

22  
23 4. A method according to claim 3, wherein the software object is a  
24 segment filter.  
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1           **5.**     A method according to claim 1, further comprising:  
2           identifying multiple simultaneous access to the media source; and  
3           invoking a commensurate number of software objects, coupling a  
4 commensurate number of instances of the media source to processing chains to  
5 satisfy the multiple simultaneous requests.

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7           **6.**     A storage medium comprising a plurality of executable instructions  
8 including at least a subset of which that, when executed, implement a method  
9 according to claim 1.

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11          **7.**     A computing system comprising:  
12          a storage medium having stored thereon a plurality of executable  
13 instructions; and  
14          an execution unit, coupled to the storage medium, to execute at least a  
15 subset of the plurality of executable instructions to implement a method according  
16 to claim 1.

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18          **8.**     A method of generating a filter graph for a user-defined processing  
19 project, the method comprising:

20          analyzing the project for multiple accesses to a single source of media  
21 content;

22          determining that the multiple accesses cannot be combined and/or share a  
23 common processing chain; and

24          coupling a single instance of the media source to the one or more  
25 processing chains through a software object to satisfy the multiple accesses

1 without invoking a commensurate number of multiple instances of the media  
2 source, wherein the one or more processing chains comprise:

3 a scalable, dynamically reconfigurable matrix switch having a  
4 plurality of inputs and a plurality of outputs;

5 at least one matrix switch input being communicatively linked with a  
6 first processing chain portion;

7 at least one other matrix switch input being communicatively linked  
8 with a second processing chain portion;

9 the matrix switch being configured to dynamically couple one or  
10 more of the matrix switch inputs to one or more of the matrix switch  
11 outputs.

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13 **9.** A method according to claim 8, further comprising:  
14 receiving a request for content at the software object; and  
15 issuing a seek command from the software object to the media source to  
16 retrieve the media for presentation to a requesting processing chain.

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18 **10.** A method according to claim 8, wherein the method is implemented  
19 by a render engine, exposed from an operating system to a media processing  
20 system executing on a computing system.

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22 **11.** A method according to claim 10, wherein the software object is a  
23 segment filter.  
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1       **12.**    A method according to claim 8, further comprising:  
2       identifying multiple simultaneous access to the media source; and  
3       invoking a commensurate number of software objects, coupling a  
4       commensurate number of instances of the media source to processing chains to  
5       satisfy the multiple simultaneous requests.

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7       **13.**    A storage medium comprising a plurality of executable instructions  
8       including at least a subset of which that, when executed, implement a method  
9       according to claim 8.

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11       **14.**    A computing system comprising:  
12       a storage medium having stored thereon a plurality of executable  
13       instructions; and  
14       an execution unit, coupled to the storage medium, to execute at least a  
15       subset of the plurality of executable instructions to implement a method according  
16       to claim 8.

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18       **15.**    A method of generating a filter graph for a user-defined processing  
19       project, the method comprising:  
20       analyzing the project for multiple accesses to a single source of media  
21       content;  
22       determining that the multiple accesses cannot be combined and/or share a  
23       common processing chain;  
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1 coupling a single instance of the media source to the multiple processing  
2 chains through a software object to satisfy the multiple accesses without invoking  
3 a commensurate number of multiple instances of the media source; and

4 ascertaining whether the multiple processing chains share common pre-  
5 processing attributes and, if so, interposing one or more associated filters between  
6 the single source of media content and the software object.

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9 **16.** A method according to claim 15, further comprising:  
10 receiving a request for content at the software object; and  
11 issuing a seek command from the software object to the media source to  
12 retrieve the media for presentation to a requesting processing chain.

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14 **17.** A method according to claim 15, wherein the method is  
15 implemented by a render engine, exposed from an operating system to a media  
16 processing system executing on a computing system.

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18 **18.** A method according to claim 17, wherein the software object is a  
19 segment filter.

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21 **19.** A method according to claim 15, further comprising:  
22 identifying multiple simultaneous access to the media source; and  
23 invoking a commensurate number of software objects, coupling a  
24 commensurate number of instances of the media source to processing chains to  
25 satisfy the multiple simultaneous requests.

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2       **20.**     A storage medium comprising a plurality of executable instructions  
3 including at least a subset of which that, when executed, implement a method  
4 according to claim 15.  
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